Figure 1

```
  1 atgtcacgta ttggtaataa agtaattact atgcctgcag gcgttgaatt aacaaataac
 61 aacaatgtta ttactgttaa aggccctaaa ggcgaactca ctcgtgagtt caacaaaaat
121 attgaaatca aagttgaagg gactgaaatc acagttgtac gtcctaacga ctcaaaagaa
181 atgaaaacaa tccatggtac aacccgtgct aacttgaata acatggttgt aggtgtttct
241 gaaggtttca aaaaagatct tgaaatgaag ggtgtcggtt accgtgctca acttcaaggt
301 actaaacttg tcctttcagt aggtaaatct caccaagacg aagttgaagc tccagaagga
361 attactttca ctgttgctaa cccaacttca atctcagttg aaggaatcaa caaagaagtt
421 gttggtcaaa cagctgctta catccgtagc ttgcgttcac cagagcctta caaaggcaaa
481 gggatccgtt acgttggtga atacgtacgc cttaagaag gtaaaacagg taaatataa
```
(SEQ ID NO: 1)


Figure 2

```
  1 MSRIGNKVIT MPAGVELTNN NNVITVKGPK GELTREFNKN IEIKVEGTEI TVVRPNDSKE
 61 MKTIHGTTRA NLNNMVVGVS EGFKKDLEMK GVGYRAQLQG TKLVLSVGKS HQDEVEAPEG
121 ITFTVANPTS ISVEGINKEV VGQTAAYIRS LRSPEPYKGK GIRYVGEYVR LKEGKTGK
```
(SEQ ID NO: 2)


Figure 3

```
   1 atgtttcagt taagaaaaaa aatgacgcgc aaacaattag ccttgttgag tgctggagtg
  61 ttgacctgtg tggttggtgg tagctacttg ataatgaacc atcaacaaca gaaattgtc
 121 tctagtgtca acaaagtaaa agccttaacc ataaaagaag ccatggaaca aggaaaagat
 181 atcagcttga ccttagctgg cgaagtaaca gctaacaaca gcagcaaagt caaaatcgac
 241 tcaagtaaag gagaagtcaa agaggtcttt gttaaaaaag gcgatgttgt caaagtagga
 301 caacccttgt ttagctatga aacgtcacag cggttaacgg ctcaaagttc agaatttgat
 361 gttcaaacca aagccaatca gctccaagtt gctaaaacca atgcagcatt gaagtgggaa
 421 acctacaatc gcaaggtcaa tgaaatcaac accctaaaat ctcgctacaa cactgcacca
 481 gatgagagct ·tactagagca aattcgcagc gcagaagaca gtgtatccca agcactaagc
 541 gatgccaaaa cagcagatag cgatgtcaaa accgctcaaa tcgaactcga taaagctaat
 601 gctactgcca caacggaaaa aggtaaacta gagtatgaca ccgttaagtc agacaccgca
 661 ggaaccattg ttagtctaaa tactgatttg ccaaatcaat caaaatccaa aaaagaaaat
 721 gaacttttta tggaaattat cgacaaatca aaaatgttag tcaaaggtaa cattagtgaa
 781 tttgaccgtg acaagttaaa aatcggtcaa aaagtcgaag tgattgaccg caaagacaac
 841 tctaaaaaat ggactggaaa agtaacccaa gttggcaacc tcaaagcaga ggaaaaaggc
 901 caaggtcaag gccaggtgg caatgaccaa caagataatc caaaccaagc aaaattccct
 961 tatgttattg aacttgacca atcagacaag cagccactca ttggctcaca cacctatgtt
1021 aatgtgctca caatgttcc agaagctggc aagatcgtat tgaaagaaac ctttacaatg
1081 gcagaaaatg gaaaaaccta tgtgtggaaa gttgataaaa acaaggtcaa aaaacaagaa
1141 atcaagacta agcccttctc aaaaggttat gttgaggtaa caagtggctt gactatgcaa
1201 gataagattg ctcagccgct tcctggcatg aaagacggta tggaggtagg aagtattgtt
1261 aaaccttaa
```
(SEQ ID NO: 3)


Figure 4

```
  1 MFQLRKKMTR KQLALLSAGV LTCVVGGSYL IMNHQQQEIV SSVNKVKALT IKEAMEQGKD
 61 ISLTLAGEVT ANNSSKVKID SSKGEVKEVF VKKGDVVKVG QPLFSYETSQ RLTAQSSEFD
121 VQTKANQLQV AKTNAALKWE TYNRKVNEIN TLKSRYNTAP DESLLEQIRS AEDSVSQALS
181 DAKTADSDVK TAQIELDKAN ATATTEKGKL EYDTVKSDTA GTIVSLNTDL PNQSKSKKEN
241 ETFMEIIDKS KMLVKGNISE FDRDKLKIGQ KVEVIDRKDN SKKWTGKVTQ VGNLKAEEKG
301 QGQGQGGNDQ QDNPNQAKFP YVIELDQSDK QPLIGSHTYV NVLNNVPEAG KIVLKETFTM
361 AENGKTYVWK VDKNKVKKQE IKTKPFSKGY VEVTSGLTMQ DKIAQPLPGM KDGMEVGSIV
421 KP
```
(SEQ ID NO: 4)

Figure 5

```
   1 atgataaaac gatgtaaagg aattggtcta gccttaatgg ccttctttt ggtagcttgt
  61 gtgaatcagc accctaaaac ggctaaagag actgaacagc agagaattgt agccacttcg
 121 gttgctgtgg ttgatatctg tgaccgttta aatttagacc tcgttggggt ttgtgatagt
 181 aaattatata cccttcctaa acgctatgat gctgttaagc gtgtgggttt acccatgaat
 241 cctgatatag agttgattgc ttctttgaaa ccaacttgga ttttgagtcc caattcttta
 301 caagaagatt tggaacccaa gtatcaaaaa ttggatactg agtatggttt tttgaactta
 361 cgaagtgttg agggcatgta ccagtccatt gatgatttag ggacctttt ccaacgtcaa
 421 caagaagcaa aagaattgcg ccagcaatac caggactatt atcgtgcttt ccaagctaaa
 481 cgtaagggga agaaaaagcc taaagtgctt attcttatgg gcttgccagg tagttatttg
 541 gtggcgacga accaatctta tgtagggaat ctttttggact tggcaggtgg tgagaatgtt
 601 tatcagtcag atgagaaaga atttctatca gctaatcctg aagacatgct ggctaaggag
 661 cctgacttga ttttacgaac agctcatgcc attccagaca aggtaaaagt gatgtttgac
 721 aaagaatttg ctgaaaatga tatttggaaa cattttacgg cagtcaagga agggaaagtc
 781 tatgatttgg acaataccct gtttggcatg agtgctaaat gaactaccc agaagccttg
 841 gacaccttaa cacagctttt tgaccacgtg ggagatcatc cgtaa
```

(SEQ ID NO: 5)


Figure 6

```
   1 MIKRCKGIGL ALMAFFLVAC VNQHPKTAKE TEQQRIVATS VAVVDICDRL NLDLVGVCDS
  61 KLYTLPKRYD AVKRVGLPMN PDIELIASLK PTWILSPNSL QEDLEPKYQK LDTEYGFLNL
 121 RSVEGMYQSI DDLGNLFQRQ QEAKELRQQY QDYYRAFQAK RKGKKKPKVL ILMGLPGSYL
 181 VATNQSYVGN LLDLAGGENV YQSDEKEFLS ANPEDMLAKE PDLILRTAHA IPDKVKVMFD
 241 KEFAENDIWK HFTAVKEGKV YDLDNTLFGM SAKLNYPEAL DTLTQLFDHV GDHP
```

(SEQ ID NO: 6)


Figure 7

```
   1 atgtcacgta ttggtaataa agtaattact atgcctgcag gcgttgaatt aacaaataac
  61 aacaatgtta ttactgttaa aggccctaaa ggcgaactca ctcgtgagtt aacaaaaat
 121 attgaaatca aagttgaagg gactgaaatc acagttgtac gtcctaacga ctcaaaagaa
 181 atgaaaacaa tccatggtac aacccgtgct aacttgaata acatggttgt aggtgtttct
 241 gaaggtttca aaaaagatct tgaaatgaag ggtgtcggtt accgtgctca acttcaaggt
 301 actaaacttg tccttttcagt aggtaaatct caccaagacg aagttgaagc tccagaagga
 361 attactttca ctgttgctaa cccaacttca atctcagttg aaggaatcaa caaagaagtt
 421 gttggtcaaa cagctgctta catccgtagc ttgcgttcac cagagcctta caaaggcaaa
 481 gggatccgtt acgttggtga atacgtacgc cttaagaag gtaaaacagg taaataa
```

(SEQ ID NO: 21)


Figure 8

```
   1 MSRIGNKVIT MPAGVELTNN NNVITVKGPK GELTREFNKN IEIKVEGTEI TVVRPNDSKE
  61 MKTIHGTTRA NLNNMVVGVS EGFKKDLEMK GVGYRAQLQG TKLVLSVGKS HQDEVEAPEG
 121 ITFTVANPTS ISVEGINKEV VGQTAAYIRS LRSPEPYKGK GIRYVGEYVR LKEGKTGK
```

(SEQ ID NO: 22)

Figure 9

```
  1 atgtcacgta ttggtaataa agtaattact atgcctgcag gcgttgaatt aacaaataac
 61 aacaatgtta ttactgttaa aggccctaaa ggcgaactca ctcgtgagtt taacaaaaat
121 attgaaatca aagttgaagg gactgaaatc acagttgtac gtcctaacga ctcaaaagaa
181 atgaaaacaa tccatggtac aacccgtgct aacttgaata acatggttgt aggtgtttct
241 gaaggtttca aaaaagatct tgaaatgaag ggtgtcggtt accgtgctca acttcaaggt
301 actaaacttg tcctttcagt aggtaaatct caccaagacg aagttgaagc tccagaagga
361 attactttca ctgttgctaa cccaacttca atctcagttg aaggaatcaa caaagaagtt
421 gttggtcaaa cagctgctta catccgtagc ttgcgttcac cagagcctta caaaggcaaa
481 gggatccgtt acgttggtga atacgtacgc cttaagaag gtaaaacagg taaataa
```
(SEQ ID NO: 23)

Figure 10

```
  1 MSRIGNKVIT MPAGVELTNN NNVITVKGPK GELTREFNKN IEIKVEGTEI TVVRPNDSKE
 61 MKTIHGTTRA NLNNMVVGVS EGFKKDLEMK GVGYRAQLQG TKLVLSVGKS HQDEVEAPEG
121 ITFTVANPTS ISVEGINKEV VGQTAAYIRS LRSPEPYKGK GIRYVGEYVR LKEGKTGK
```
(SEQ ID NO: 24)

Figure 11

```
  1 atgtcacgta ttggtaataa agtaattact atgcctgcag gcgttgaatt aacaaataac
 61 aacaatgtta ttactgttaa aggccctaaa ggcgaactca ctcgtgagtt caacaaaaat
121 attgaaatca aagttgaagg gactgaaatc acagttgtac gtcctaacga ctcaaaagaa
181 atgaaaacaa tccatgggac aacccgtgct aacttgaata acatggttgt aggtgtttct
241 gaaggtttca aaaaagatct tgaaatgaag ggtgtcggtt accgcgctca acttcaaggt
301 actaaacttg tcctttcagt aggtaaatct caccaagacg aagttgaagc tccagaagga
361 attactttca ctgttgctaa cccaacttca atctcagttg aaggaatcaa caaagaagtt
421 gttggtcaaa cagctgctta catccgtagc ttgcgttcac cagagcctta caaaggcaaa
481 gggatccgtt acgttggtga atacgtacgc cttaagaag gtaaaacagg taaataa
```
(SEQ ID NO: 25)

Figure 12

```
  1 MSRIGNKVIT MPAGVELTNN NNVITVKGPK GELTREFNKN IEIKVEGTEI TVVRPNDSKE
 61 MKTIHGTTRA NLNNMVVGVS EGFKKDLEMK GVGYRAQLQG TKLVLSVGKS HQDEVEAPEG
121 ITFTVANPTS ISVEGINKEV VGQTAAYIRS LRSPEPYKGK GIRYVGEYVR LKEGKTGK
```
(SEQ ID NO: 26)

Figure 13

```
  1 atgtcacgta ttggtaataa agtaattact atgcctgcag gtgttgaatt aacaaataac
 61 aacaatgtta ttactgttaa aggccctaaa ggcgaactca ctcgtgagtt caacaaaaat
121 attgaaatca aagttgaagg gactgaaatc acagttgtac gtcctaacga ctcaaaagaa
181 atgaaaacaa tccatggtac aacccgtgct aacttgaata acatggttgt aggtgtttct
241 gaaggtttca aaaaagatct tgaaatgaag ggtgtcggtt accgtgctca acttcaaggt
301 actaaacttg tcctttcagt aggtaaatct caccaagacg aagttgaagc tccagaagga
361 attactttca ctgttgctaa cccaacttca atctcagttg aaggaatcaa caaagaagtt
421 gttggtcaaa cagctgctta catccgtagc ttgcgttcac cagagcctta caaaggcaaa
481 gggatccgtt acgttggtga atacgtacgc cttaagaag gtaaaacagg taaataa
```
(SEQ ID NO: 27)

Figure 14

```
  1 MSRIGNKVIT MPAGVELTNN NNVITVKGPK GELTREFNKN IEIKVEGTEI TVVRPNDSKE
 61 MKTIHGTTRA NLNNMVVGVS EGFKKDLEMK GVGYRAQLQG TKLVLSVGKS HQDEVEAPEG
121 ITFTVANPTS ISVEGINKEV VGQTAAYIRS LRSPEPYKGK GIRYVGEYVR LKEGKTGK
```
(SEQ ID NO: 28)


Figure 15

```
   1 atgtttcagt taagaaaaaa aatgacgcgc aaacaattag ccttgttgag tgctggagtg
  61 ttgacctgtg tggttggtgg tagctacttg ataatgaacc atcaacaaca agaaattgtc
 121 tctagtgtca acaaagtaaa agccttaacc ataaaagaag ccatggaaca aggaaaagat
 181 atcagcttga ccttagctgg cgaagtaaca gctaacaaca gcagcaaagt caaaatcgac
 241 tcaagtaaag gagaagtcaa agaggtcttt gttaaaaaag gcgatgttgt caaagtagga
 301 caacccttgt ttagctatga aacgtcacag cggttaacgg ctcaaagttc agaatttgat
 361 gttcaaacca aagccaatca gctccaagtt gctaaaacca atgcagcatt gaagtgggaa
 421 acctacaatc gcaaggtcaa tgaaatcaac accctaaaat ctcgctacaa cactgcacca
 481 gatgagagct tactagagca aattcgcagc gcagaagaca gtgtatccca agcactaagc
 541 gatgccaaaa cagcagatag cgatgtcaaa accgctcaaa tcgaactcga taaagctaat
 601 gctactgcca caacggaaaa aggtaaacta gagtatgaca ccgttaagtc agacaccgca
 661 ggaaccattg ttagtctaaa tactgatttg ccaaatcaat caaaatccaa aaaagaaaat
 721 gaacttttta tggaaattat cgacaaatca aaaatgttag tcaaaggtaa cattagtgaa
 781 tttgaccgtg acaagttaaa aatcggtcaa aaagtcgaag tgattgaccg caaagacaac
 841 tctaaaaaat ggactggaaa agtaacccaa gttggcaacc tcaaagcaga ggaaaaaggc
 901 caaggtcaag gccaggtgg caatgaccaa caagataatc caaaccaagc aaaattccct
 961 tatgttattg aacttgacca atcagacaag cagccactca ttggctcaca cacctatgtt
1021 aatgtactca caatgttcc agaagctggc aagatcgtat tgaaagaaac ctttacaatg
1081 gcagaaaatg gaaaaaccta tgtgtggaaa gttgataaaa acaaggtcaa aaaacaagaa
1141 atcaagacta agccccttctc aaaaggttat gttgaggtaa caagtggctt gactatgcaa
1201 gataagattg ctcagccgct tcctggcatg aaagacggta tggaggtagg aagtattgtt
1261 aaaccttaa
```
(SEQ ID NO: 29)


Figure 16

```
  1 MFQLRKKMTR KQLALLSAGV LTCVVGGSYL IMNHQQQEIV SSVNKVKALT IKEAMEQGKD
 61 ISLTLAGEVT ANNSSKVKID SSKGEVKEVF VKKGDVVKVG QPLFSYETSQ RLTAQSSEFD
121 VQTKANQLQV AKTNAALKWE TYNRKVNEIN TLKSRYNTAP DESLLEQIRS AEDSVSQALS
181 DAKTADSDVK TAQIELDKAN ATATTEKGKL EYDTVKSDTA GTIVSLNTDL PNQSKSKKEN
241 ETFMEIIDKS KMLVKGNISE FDRDKLKIGQ KVEVIDRKDN SKKWTGKVTQ VGNLKAEEKG
301 QGQGQGGNDQ QDNPNQAKFP YVIELDQSDK QPLIGSHTYV NVLNNVPEAG KIVLKETFTM
361 AENGKTYVWK VDKNKVKKQE IKTKPFSKGY VEVTSGLTMQ DKIAQPLPGM KDGMEVGSIV
421 KP
```
(SEQ ID NO: 30)


Figure 17

```
  1 atgtttcagt taagaaaaaa aatgacgcgc aaacaattag ccttgttgag tgctggagtg
 61 ttgacctgtg tggttggtgg tagctacttg ataatgaacc atcaacaaca agaaattgtc
121 tctagtgtca acaaagtaaa agccttaacc ataaaagaag ccatggaaca aggaaaagat
181 atcagcttga ccttagctgg cgaagtaaca gctaacaaca gcagcaaagt caaaatcgac
241 tcaagtaaag gagaagtcaa agaggtcttt gttaaaaaag gcgatgttgt caaagtagga
301 caacccttgt ttagctatga aacgtcacag cggttaacgg ctcaaagttc agaatttgat
361 gttcaaacca aagccaatca gctccaagtt gctaaaacca atgcagcatt gaagtgggaa
421 acctacaatc gcaaggtcaa tgaaatcaac accctaaaat ctcgctacaa cactgcacca
481 gatgagagct tactagagca aattcgcagc gcagaagaca gtgtatccca agcactaagc
541 gatgccaaaa cagcagatag cgatgtcaaa accgctcaaa tcgaactcga taaagctaat
601 gctactgcca caacggaaaa aggtaaacta gagtatgaca ccgttaagtc agacaccgca
```

Figure 17 (continued)

```
 661 ggaaccattg ttagtctaaa tactgatttg ccaaatcaat caaaatccaa aaaagaaaat
 721 gaaactttta tggaaattat cgacaaatca aaaatgttag tcaaaggtaa cattagtgaa
 781 tttgaccgtg acaagttaaa aatcggtcaa aaagtcgaag tgattgaccg caaagacaac
 841 tctaaaaaat ggactggaaa agtaacccaa gttggcaacc tcaaagcaga ggaaaaaggc
 901 caaggtcaag gccaaggtgg caatgaccaa caagataatc caaaccaagc aaaattccct
 961 tatgttattg aacttgacca atcagacaag cagccactca ttggctcaca cacctatgtt
1021 aatgtactca caatgttcc agaagctggc aagatcgtat tgaaagaaac ctttacaatg
1081 gcagaaaatg gaaaaaccta tgtgtggaaa gttgataaaa acaaggtcaa aaaacaagaa
1141 atcaagacta agcccttctc aaaaggttat gttgaggtaa caagtggctt gactatgcaa
1201 gataagattg ctcagccgct tcctggcatg aaagacggta tggaggtagg aagtattgtt
1261 aaacccttaa
```
(SEQ ID NO: 31)


Figure 18

```
   1 MFQLRKKMTR KQLALLSAGV LTCVVGGSYL IMNHQQQEIV SSVNKVKALT IKEAMEQGKD
  61 ISLTLAGEVT ANNSSKVKID SSKGEVKEVF VKKGDVVKVG QPLFSYETSQ RLTAQSSEFD
 121 VQTKANQLQV AKTNAALKWE TYNRKVNEIN TLKSRYNTAP DESLLEQIRS AEDSVSQALS
 181 DAKTADSDVK TAQIELDKAN ATATTEKGKL EYDTVKSDTA GTIVSLNTDL PNQSKSKKEN
 241 ETFMEIIDKS KMLVKGNISE FDRDKLKIGQ KVEVIDRKDN SKKWTGKVTQ VGNLKAEEKG
 301 QGQGQGGNDQ QDNPNQAKFP YVIELDQSDK QPLIGSHTYV NVLNNVPEAG KIVLKETFTM
 361 AENGKTYVWK VDKNKVKKQE IKTKPFSKGY VEVTSGLTMQ DKIAQPLPGM KDGMEVGSIV
 421 KP
```
(SEQ ID NO: 32)


Figure 19

```
   1 atgtttcagt taagaaaaaa aatgacgcgc aaacaattag ccttgttgag tgctggagtg
  61 ttgacctgtg tggttggtgg tagctacttg ataatgaacc atcaacaaca gaagttgtc
 121 tctagtgtca acaaagtaaa agccttaacc ataaagaag ccatggaaca aggaaaagat
 181 atcagcttga ccttagctgg cgaagtaaca gctaacaaca gcagcaaagt caaaatcgac
 241 tcaagtaaag gagaagtcaa agaggtcttt gtcaaaaaag gcgatgttgt caaagtagga
 301 caacccttgt ttagctatga aacgtcacag cggttaacgg ctcaaagttc agaatttgat
 361 gttcaaacca aagccaatca actccaagtt gctaaaacca atgcagcatt gaagtgggaa
 421 acctacaatc gcaggtcaa tgaaatcaac accctaaat ctcgctacaa cactgcacca
 481 gatgagagct actagagca aattcgcagc gcagaagaca gtgtatccca agcactaagc
 541 gatgccaaaa cagcagatag cgatgtcaaa accgctcaaa tcgaactcga taaagctaat
 601 gctactgcca caatggaaaa aggtaaacta gagtatgaca ccgttaagtc agacaccgca
 661 ggaaccattg ttagcctaaa tactgatttg ccaaatcaat caaaatccaa aaaagaaaat
 721 gaaactttta tggaaattat cgacaaatca aaaatgttag tcaaaggtaa catcagtgaa
 781 tttgaccgtg acaagttaaa aatcgatcaa aaagtcgaag tgattgaccg caaagacaac
 841 tctaaaaaat ggactggaaa agtaacccaa gttggcaacc tcaaagcaga ggaaaaaggc
 901 caaggtcaag gccaaggtgg caatgaccaa caagacaatc caaaccaagc aaaattccct
 961 tatgttatcg aacttgacca atcagacaag cagccactca ttggctcaca cacctatgtt
1021 aatgtgctca caatgttcc agaagctggc aagatcgtat tgaaagaaac ctttacaatg
1081 gcagaaaatg gaaaaaccta tgtgtggaaa gttgataaaa acaaggtcaa aaaacaagaa
1141 atcaagacta agcccttctc aaaaggttat gttgaggtga caagtggctt gactatgcaa
1201 gataagattg ctcagccgct tcctggcatg aaagacggta tggaggtagg aagtattgtt
1261 aaacccttaa
```
SEQ ID NO: 33

Figure 20

```
  1 MFQLRKKMTR KQLALLSAGV LTCVVGGSYL IMNHQQQEVV SSVNKVKALT IKEAMEQGKD
 61 ISLTLAGEVT ANNSSKVKID SSKGEVKEVF VKKGDVVKVG QPLFSYETSQ RLTAQSSEFD
121 VQTKANQLQV AKTNAALKWE TYNRKVNEIN TLKSRYNTAP DESLLEQIRS AEDSVSQALS
181 DAKTADSDVK TAQIELDKAN ATATMEKGKL EYDTVKSDTA GTIVSLNTDL PNQSKSKKEN
241 ETFMEIIDKS KMLVKGNISE FDRDKLKIDQ KVEVIDRKDN SKKWTGKVTQ VGNLKAEEKG
301 QGQGQGGNDQ QDNPNQAKFP YVIELDQSDK QPLIGSHTYV NVLNNVPEAG KIVLKETFTM
361 AENGKTYVWK VDKNKVKKQE IKTKPFSKGY VEVTSGLTMQ DKIAQPLPGM KDGMEVGSIV
421 KP
```
(SEQ ID NO: 34)

Figure 21

```
   1 atgtttcagt taagaaaaaa aatgacgcgc aaacaattag ccttgttgag tgctggagtg
  61 ttgacctgtg tggttggtgg tacctacttg ataatgaatc atcaacaaca agaaattgtc
 121 tctagtgtca acaaagtaaa agccttaacc ataaaagaag ccatggaaca aggaaaagat
 181 atcagcttga ccttagctgg cgaagtaaca gctaacaaca gcagcaaagt caaaatcgac
 241 tcaagtaaag gagaagtcaa agatgtcttt gtcaaaaaag gcgatgttgt caaagtagga
 301 caacccttgt ttagctatga aacgtcacaa cggttaacgg ctcaaagttc agaatttgat
 361 gttcaaacca aagccaatca actccaagtt gctaaaacca atgcagcatt gaagtgggaa
 421 acctacaatc gcaaggtcaa tgaaatcaat accctaaaat ctcgctacaa cactgcacca
 481 gatgagagct actagagca aattcgcagc gcagaagaca gtgtatctca agcactaagc
 541 gatgccaaaa cagcagatag cgatgtcaaa accgctcaaa tcgaactcga taaagctaat
 601 gctactgccg aacggaaaa aggtaaacta gagtatgaca ccgttaagtc agacaccgca
 661 ggaaccattg ttagtctaaa tactgatttg ccaaatcaat caaaatccaa aaaagaaaat
 721 gaaacttta tggaaattat cgacaaatca aaaatgttag tcaaggtaa catcagtgaa
 781 tttgaccgtg acaagttaaa aatcgatcaa aaagtcgaag tgattgaccg caaagacaac
 841 tctaaaaaat ggactggaaa agtaacccaa gttggcaacc tcaaagcaga ggaaaaaggc
 901 caaggtcaag gccaaggtgg caatgaccaa caagataatc caaaccaagc aaaattccct
 961 tatgttatcg aacttgacca atcagacaag cagccactca ttggttcaca cacctatgtt
1021 aatgtgctca acaatgttcc agaagctggc aagatcgtat tgaaagaaac ctttacaatg
1081 gcagaaaatg gaaaaaccta tgtgtggaaa gttgataaaa acaaggtcaa aaaacaagaa
1141 atcaagacta gcccttctc aaaaggttat gttgaggtga caagcggctt gactatgcaa
1201 gataagattg ctcagccgct tcctggcatg aaagacggta tggaggtagg aagtattgtt
1261 aaaccttaa
```
(SEQ ID NO: 35)

Figure 22

```
  1 MFQLRKKMTR KQLALLSAGV LTCVVGGTYL IMNHQQQEIV SSVNKVKALT IKEAMEQGKD
 61 ISLTLAGEVT ANNSSKVKID SSKGEVKDVF VKKGDVVKVG QPLFSYETSQ RLTAQSSEFD
121 VQTKANQLQV AKTNAALKWE TYNRKVNEIN TLKSRYNTAP DESLLEQIRS AEDSVSQALS
181 DAKTADSDVK TAQIELDKAN ATAATEKGKL EYDTVKSDTA GTIVSLNTDL PNQSKSKKEN
241 ETFMEIIDKS KMLVKGNISE FDRDKLKIDQ KVEVIDRKDN SKKWTGKVTQ VGNLKAEEKG
301 QGQGQGGNDQ QDNPNQAKFP YVIELDQSDK QPLIGSHTYV NVLNNVPEAG KIVLKETFTM
361 AENGKTYVWK VDKNKVKKQE IKTKPFSKGY VEVTSGLTMQ DKIAQPLPGM KDGMEVGSIV
421 KP
```
(SEQ ID NO: 36)

Figure 23

```
  1 atgataaaac gatgtaaagg aattggtcta gtcttaatgg ccttcttttt ggtagcttgt
 61 gtaaatcagc accctaaaac ggctaaagag actgaacagc agagaattgt agccacttcg
121 gttgctgtgg ttgatatctg tgaccgttta aatttagacc tcgttggggt ttgtgatagt
181 aaattatata cccttcctaa acgctatgat gctgttaagc gtgtgggttt acccatgaat
241 cctgatatag agttgattgc ttctttgaaa ccaacttgga ttttgagtcc caattcttta
301 caagaagatt tggaacccaa gtatcaaaaa ttggatactg agtatggttt tttgaactta
361 cgaagtgttg agggcatgta ccagtctatt gatgatttag ggaacctttt ccaacgtcaa
421 caagaagcaa aagaattgcg ccagcaatac caggactatt atcgtgcttt ccaagctaaa
481 cgcaagggga agaaaaagcc taaagtgctt attcttatgg gcttgccagg tagttatttg
541 gtggcgacga accaatctta tgtagggaat cttttggact ggcaggtgg tgagaatgtt
601 tatcagtcag atgagaaaga atttctatca gttaatcctg aagacatgct agctaaggag
661 cctgacttga ttttacgaac agctcacgcc attccagaca aggtaaaagt gatgtttgac
721 aaagaatttg ctgaaaatga tatttggaaa cattttacgg cagtcaagga agggaaagtc
781 tatgatttgg acaataccct gtttggcatg agtgctaaat tgaactaccc agaagccttg
841 gacaccttaa cacagctttt tgaccacgtg ggagatcatc cgtaa
```
(SEQ ID NO: 37)

Figure 24

```
  1 MIKRCKGIGL VLMAFFLVAC VNQHPKTAKE TEQQRIVATS VAVVDICDRL NLDLVGVCDS
 61 KLYTLPKRYD AVKRVGLPMN PDIELIASLK PTWILSPNSL QEDLEPKYQK LDTEYGFLNL
121 RSVEGMYQSI DDLGNLFQRQ QEAKELRQQY QDYYRAFQAK RKGKKKPKVL ILMGLPGSYL
181 VATNQSYVGN LLDLAGGENV YQSDEKEFLS VNPEDMLAKE PDLILRTAHA IPDKVKVMFD
241 KEFAENDIWK HFTAVKEGKV YDLDNTLFGM SAKLNYPEAL DTLTQLFDHV GDHP
```
(SEQ ID NO: 38)

Figure 25

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  1 atgataaaac gatgtaaagg aattggtcta gtcttaatgg ccttcttttt ggtagcttgt
 61 gtaaatcagc accctaaaac ggctaaagag actgaacagc agagaattgt agccacttcg
121 gttgctgtgg ttgatatctg tgaccgttta aatttagacc tcgttggggt ttgtgatagt
181 aaattatata cccttcctaa acgctatgat gctgttaagc gtgtgggttt acccatgaat
241 cctgatatag agttgattgc ttctttgaaa ccaacttgga ttttgagtcc caattcttta
301 caagaagatt tggaacccaa gtatcaaaaa ttggatactg agtatggttt tttgaactta
361 cgaagtgttg agggcatgta ccagtctatt gatgatttag ggaacctttt ccaacgtcaa
421 caagaagcaa aagaattgcg ccagcaatac caggactatt atcgtgcttt ccaagctaaa
481 cgcaagggga agaaaaagcc taaagtgctt attcttatgg gcttgccagg tagttatttg
541 gtggcgacga accaatctta tgtagggaat cttttggact ggcaggtgg tgagaatgtt
601 tatcagtcag atgagaaaga atttctatca gttaatcctg aagacatgct agctaaggag
661 cctgacttga ttttacgaac agctcacgcc attccagaca aggtaaaagt gatgtttgac
721 aaagaatttg ctgaaaatga tatttggaaa cattttacgg cagtcaagga agggaaagtc
781 tatgatttgg acaataccct gtttggcatg agtgctaaat tgaactaccc agaagccttg
841 gacaccttaa cacagctttt tgaccacgtg ggagatcatc cgtaa
```
(SEQ ID NO: 39)

Figure 26

```
  1 MIKRCKGIGL VLMAFFLVAC VNQHPKTAKE TEQQRIVATS VAVVDICDRL NLDLVGVCDS
 61 KLYTLPKRYD AVKRVGLPMN PDIELIASLK PTWILSPNSL QEDLEPKYQK LDTEYGFLNL
121 RSVEGMYQSI DDLGNLFQRQ QEAKELRQQY QDYYRAFQAK RKGKKKPKVL ILMGLPGSYL
181 VATNQSYVGN LLDLAGGENV YQSDEKEFLS VNPEDMLAKE PDLILRTAHA IPDKVKVMFD
241 KEFAENDIWK HFTAVKEGKV YDLDNTLFGM SAKLNYPEAL DTLTQLFDHV GDHP
```
(SEQ ID NO: 40)

Figure 27

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  1 atgataaaac gatgtaaagg aattggtcta gccttaatgg ccttcttttt ggtagcttgt
 61 gtgaatcagc accctaaaac ggctaaagag actgaacagc agagaattgt agccacttcg
121 gttgctgtgg ttgatatctg tgaccgttta aatttagacc tcgttggggt ttgtgatagt
181 aaattatata cccttcctaa acgctatgat gctgttaagc gtgtgggttt acccatgaat
241 cctgatatag agttgattgc ttctttgaaa ccaacttgga ttttgagtcc caattcttta
301 caagaagatt tggaacccaa gtatcaaaaa ttggatactg agtatggttt tttgaactta
361 cgaagtgttg agggcatgta ccagtccatt gatgatttag ggaacctttt ccaacgtcaa
421 caagaagcaa aagaattgcg ccagcaatac caggactatt atcgtgcttt ccaagctaaa
481 cgtaagggga agaaaaagcc taaagtgctt attcttatgg gcttgccagg tagttatttg
541 gtggcgacga accaatctta tgtagggaat ctttttggatt tggcaggtgg tgagaatgtt
601 tatcagtcag atgagaaaga atttctatca gctaatcctg aagacatgct ggctaaggag
661 cctgatttga ttttacgaac agctcacgcc attccagaca aggtaaaagt gatgtttgac
721 aaagaatttg ctgaaaatga tatttggaaa cattttacgg cagtcaagga agggaaagtc
781 tatgatttgg acaataccct gtttggcatg agtgctaaat tgaactaccc agaagccttg
841 gacaccttaa cacagctttt tgaccgcgtg ggagatcatc cgtaa
```
(SEQ ID NO: 41)

Figure 28

```
  1 MIKRCKGIGL ALMAFFLVAC VNQHPKTAKE TEQQRIVATS VAVVDICDRL NLDLVGVCDS
 61 KLYTLPKRYD AVKRVGLPMN PDIELIASLK PTWILSPNSL QEDLEPKYQK LDTEYGFLNL
121 RSVEGMYQSI DDLGNLFQRQ QEAKELRQQY QDYYRAFQAK RKGKKKPKVL ILMGLPGSYL
181 VATNQSYVGN LLDLAGGENV YQSDEKEFLS ANPEDMLAKE PDLILRTAHA IPDKVKVMFD
241 KEFAENDIWK HFTAVKEGKV YDLDNTLFGM SAKLNYPEAL DTLTQLFDRV GDHP
```
(SEQ ID NO: 42)

Figure 29

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  1 atgataaaac gatgtaaagg aattggtcta gtcttaatgg ccttcttttt ggtagcttgt
 61 gtaaatcagc accctaaaac ggctaaagag actgaacagc agagaattgt agccacttcg
121 gttgctgtgg ttgatatctg tgaccgttta aatttagacc tcgttggggt ttgtgatagt
181 aaattatata cccttcctaa acgctatgat gctgttaagc gtgtgggttt acccatgaat
241 cctgatatag agttgattgc ttctttgaaa ccaacttgga ttttgagtcc caattcttta
301 caagaagatt tggaacccaa gtatcaaaaa ttggatactg agtatggttt tttgaactta
361 cgaagtgttg agggcatgta ccagtctatt gatgatttag ggaacctttt ccaacgtcaa
421 caagaagcaa aagaattgcg ccagcaatac caggactatt atcgtgcttt ccaagctaaa
481 cgtaagggga agaaaaagcc taaagtgctt attcttatgg gcttgccagg tagttatttg
541 gtggcgacga accaatctta tgtagggaat ctttttggact tggcaggtgg tgagaatgtt
601 tatcagtcag atgagaaaga atttctatca gttaatcctg aagacatgct agctaaggag
661 cctgacttga ttttacgaac agctcacgcc attccagaca aggtaaaagt gatgtttgac
721 aaagaatttg ctgaaaatga tatttggaaa cattttacgg cagtcaagga agggaaagtc
781 tatgatttgg acaataccct gtttggcatg agtgctaaat tgaactaccc agaagccttg
841 gacaccttaa cacagctttt tgaccacgtg ggagatcatc cgtaa
```
(SEQ ID NO: 43)

Figure 30

```
  1 MIKRCKGIGL VLMAFFLVAC VNQHPKTAKE TEQQRIVATS VAVVDICDRL NLDLVGVCDS
 61 KLYTLPKRYD AVKRVGLPMN PDIELIASLK PTWILSPNSL QEDLEPKYQK LDTEYGFLNL
121 RSVEGMYQSI DDLGNLFQRQ QEAKELRQQY QDYYRAFQAK RKGKKKPKVL ILMGLPGSYL
181 VATNQSYVGN LLDLAGGENV YQSDEKEFLS VNPEDMLAKE PDLILRTAHA IPDKVKVMFD
241 KEFAENDIWK HFTAVKEGKV YDLDNTLFGM SAKLNYPEAL DTLTQLFDHV GDHP
```
(SEQ ID NO: 44)

Figure 31

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            1                                                    50
ATCC700294  ATGTCACGTA TTGGTAATAA AGTAATTACT ATGCCTGCAG GCGTTGAATT
MGAS315     ATGTCACGTA TTGGTAATAA AGTAATTACT ATGCCTGCAG GCGTTGAATT
SSI-1       ATGTCACGTA TTGGTAATAA AGTAATTACT ATGCCTGCAG GCGTTGAATT
Manfredo    ATGTCACGTA TTGGTAATAA AGTAATTACT ATGCCTGCAG GCGTTGAATT
MGAS8232    ATGTCACGTA TTGGTAATAA AGTAATTACT ATGCCTGCAG GTGTTGAATT


            51                                                   100
ATCC700294  AACAAATAAC AACAATGTTA TTACTGTTAA AGGCCCTAAA GGCGAACTCA
MGAS315     AACAAATAAC AACAATGTTA TTACTGTTAA AGGCCCTAAA GGCGAACTCA
SSI-1       AACAAATAAC AACAATGTTA TTACTGTTAA AGGCCCTAAA GGCGAACTCA
Manfredo    AACAAATAAC AACAATGTTA TTACTGTTAA AGGCCCTAAA GGCGAACTCA
MGAS8232    AACAAATAAC AACAATGTTA TTACTGTTAA AGGCCCTAAA GGCGAACTCA


            101                                                  150
ATCC700294  CTCGTGAGTT CAACAAAAAT ATTGAAATCA AAGTTGAAGG GACTGAAATC
MGAS315     CTCGTGAGTT TAACAAAAAT ATTGAAATCA AAGTTGAAGG GACTGAAATC
SSI-1       CTCGTGAGTT TAACAAAAAT ATTGAAATCA AAGTTGAAGG GACTGAAATC
Manfredo    CTCGTGAGTT CAACAAAAAT ATTGAAATCA AAGTTGAAGG GACTGAAATC
MGAS8232    CTCGTGAGTT CAACAAAAAT ATTGAAATCA AAGTTGAAGG GACTGAAATC


            151                                                  200
ATCC700294  ACAGTTGTAC GTCCTAACGA CTCAAAAGAA ATGAAAACAA TCCATGGTAC
MGAS315     ACAGTTGTAC GTCCTAACGA CTCAAAAGAA ATGAAAACAA TCCATGGTAC
SSI-1       ACAGTTGTAC GTCCTAACGA CTCAAAAGAA ATGAAAACAA TCCATGGTAC
Manfredo    ACAGTTGTAC GTCCTAACGA CTCAAAAGAA ATGAAAACAA TCCATGGGAC
MGAS8232    ACAGTTGTAC GTCCTAACGA CTCAAAAGAA ATGAAAACAA TCCATGGTAC


            201                                                  250
ATCC700294  AACCCGTGCT AACTTGAATA ACATGGTTGT AGGTGTTTCT GAAGGTTTCA
MGAS315     AACCCGTGCT AACTTGAATA ACATGGTTGT AGGTGTTTCT GAAGGTTTCA
SSI-1       AACCCGTGCT AACTTGAATA ACATGGTTGT AGGTGTTTCT GAAGGTTTCA
Manfredo    AACCCGTGCT AACTTGAATA ACATGGTTGT AGGTGTTTCT GAAGGTTTCA
MGAS8232    AACCCGTGCT AACTTGAATA ACATGGTTGT AGGTGTTTCT GAAGGTTTCA


            251                                                  300
ATCC700294  AAAAAGATCT TGAAATGAAG GGTGTCGGTT ACCGTGCTCA ACTTCAAGGT
MGAS315     AAAAAGATCT TGAAATGAAG GGTGTCGGTT ACCGTGCTCA ACTTCAAGGT
SSI-1       AAAAAGATCT TGAAATGAAG GGTGTCGGTT ACCGCGCTCA ACTTCAAGGT
Manfredo    AAAAAGATCT TGAAATGAAG GGTGTCGGTT ACCGCGCTCA ACTTCAAGGT
MGAS8232    AAAAAGATCT TGAAATGAAG GGTGTCGGTT ACCGTGCTCA ACTTCAAGGT


            301                                                  350
ATCC700294  ACTAAACTTG TCCTTTCAGT AGGTAAATCT CACCAAGACG AAGTTGAAGC
MGAS315     ACTAAACTTG TCCTTTCAGT AGGTAAATCT CACCAAGACG AAGTTGAAGC
SSI-1       ACTAAACTTG TCCTTTCAGT AGGTAAATCT CACCAAGACG AAGTTGAAGC
Manfredo    ACTAAACTTG TCCTTTCAGT AGGTAAATCT CACCAAGACG AAGTTGAAGC
MGAS8232    ACTAAACTTG TCCTTTCAGT AGGTAAATCT CACCAAGACG AAGTTGAAGC


            351                                                  400
ATCC700294  TCCAGAAGGA ATTACTTTCA CTGTTGCTAA CCCAACTTCA ATCTCAGTTG
MGAS315     TCCAGAAGGA ATTACTTTCA CTGTTGCTAA CCCAACTTCA ATCTCAGTTG
SSI-1       TCCAGAAGGA ATTACTTTCA CTGTTGCTAA CCCAACTTCA ATCTCAGTTG
Manfredo    TCCAGAAGGA ATTACTTTCA CTGTTGCTAA CCCAACTTCA ATCTCAGTTG
MGAS8232    TCCAGAAGGA ATTACTTTCA CTGTTGCTAA CCCAACTTCA ATCTCAGTTG
```

Figure 31 (continued)

```
                    401                                             450
    ATCC700294    AAGGAATCAA CAAAGAAGTT GTTGGTCAAA CAGCTGCTTA CATCCGTAGC
    MGAS315       AAGGAATCAA CAAAGAAGTT GTTGGTCAAA CAGCTGCTTA CATCCGTAGC
    SSI-1         AAGGAATCAA CAAAGAAGTT GTTGGTCAAA CAGCTGCTTA CATCCGTAGC
    Manfredo      AAGGAATCAA CAAAGAAGTT GTTGGTCAAA CAGCTGCTTA CATCCGTAGC
    MGAS8232      AAGGAATCAA CAAAGAAGTT GTTGGTCAAA CAGCTGCTTA CATCCGTAGC


                    451                                             500
    ATCC700294    TTGCGTTCAC CAGAGCCTTA CAAAGGCAAA GGGATCCGTT ACGTTGGTGA
    MGAS315       TTGCGTTCAC CAGAGCCTTA CAAAGGCAAA GGGATCCGTT ACGTTGGTGA
    SSI-1         TTGCGTTCAC CAGAGCCTTA CAAAGGCAAA GGGATCCGTT ACGTTGGTGA
    Manfredo      TTGCGTTCAC CAGAGCCTTA CAAAGGCAAA GGGATCCGTT ACGTTGGTGA
    MGAS8232      TTGCGTTCAC CAGAGCCTTA CAAAGGCAAA GGGATCCGTT ACGTTGGTGA


                    501                                  537
    ATCC700294    ATACGTACGC CTTAAAGAAG GTAAAACAGG TAAATAA
    MGAS315       ATACGTACGC CTTAAAGAAG GTAAAACAGG TAAATAA
    SSI-1         ATACGTACGC CTTAAAGAAG GTAAAACAGG TAAATAA
    Manfredo      ATACGTACGC CTTAAAGAAG GTAAAACAGG TAAATAA
    MGAS8232      ATACGTACGC CTTAAAGAAG GTAAAACAGG TAAATAA
```

Figure 32

```
                    1                                               50
    ATCC700294    MSRIGNKVIT MPAGVELTNN NNVITVKGPK GELTREFNKN IEIKVEGTEI
    MGAS315       MSRIGNKVIT MPAGVELTNN NNVITVKGPK GELTREFNKN IEIKVEGTEI
    SSI-1         MSRIGNKVIT MPAGVELTNN NNVITVKGPK GELTREFNKN IEIKVEGTEI
    Manfredo      MSRIGNKVIT MPAGVELTNN NNVITVKGPK GELTREFNKN IEIKVEGTEI
    MGAS8232      MSRIGNKVIT MPAGVELTNN NNVITVKGPK GELTREFNKN IEIKVEGTEI


                    51                                              100
    ATCC700294    TVVRPNDSKE MKTIHGTTRA NLNNMVVGVS EGFKKDLEMK GVGYRAQLQG
    MGAS315       TVVRPNDSKE MKTIHGTTRA NLNNMVVGVS EGFKKDLEMK GVGYRAQLQG
    SSI-1         TVVRPNDSKE MKTIHGTTRA NLNNMVVGVS EGFKKDLEMK GVGYRAQLQG
    Manfredo      TVVRPNDSKE MKTIHGTTRA NLNNMVVGVS EGFKKDLEMK GVGYRAQLQG
    MGAS8232      TVVRPNDSKE MKTIHGTTRA NLNNMVVGVS EGFKKDLEMK GVGYRAQLQG


                    101                                             150
    ATCC700294    TKLVLSVGKS HQDEVEAPEG ITFTVANPTS ISVEGINKEV VGQTAAYIRS
    MGAS315       TKLVLSVGKS HQDEVEAPEG ITFTVANPTS ISVEGINKEV VGQTAAYIRS
    SSI-1         TKLVLSVGKS HQDEVEAPEG ITFTVANPTS ISVEGINKEV VGQTAAYIRS
    Manfredo      TKLVLSVGKS HQDEVEAPEG ITFTVANPTS ISVEGINKEV VGQTAAYIRS
    MGAS8232      TKLVLSVGKS HQDEVEAPEG ITFTVANPTS ISVEGINKEV VGQTAAYIRS


                    151                         178
    ATCC700294    LRSPEPYKGK GIRYVGEYVR LKEGKTGK
    MGAS315       LRSPEPYKGK GIRYVGEYVR LKEGKTGK
    SSI-1         LRSPEPYKGK GIRYVGEYVR LKEGKTGK
    Manfredo      LRSPEPYKGK GIRYVGEYVR LKEGKTGK
    MGAS8232      LRSPEPYKGK GIRYVGEYVR LKEGKTGK
```

Figure 33

```
            1                                                    50
ATCC700294  ATGTTTCAGT TAAGAAAAAA AATGACGCGC AAACAATTAG CCTTGTTGAG
MGAS315     ATGTTTCAGT TAAGAAAAAA AATGACGCGC AAACAATTAG CCTTGTTGAG
SSI-1       ATGTTTCAGT TAAGAAAAAA AATGACGCGC AAACAATTAG CCTTGTTGAG
Manfredo    ATGTTTCAGT TAAGAAAAAA AATGACGCGC AAACAATTAG CCTTGTTGAG
MGAS8232    ATGTTTCAGT TAAGAAAAAA AATGACGCGC AAACAATTAG CCTTGTTGAG

            51                                                   100
ATCC700294  TGCTGGAGTG TTGACCTGTG TGGTTGGTGG TAGCTACTTG ATAATGAACC
MGAS315     TGCTGGAGTG TTGACCTGTG TGGTTGGTGG TAGCTACTTG ATAATGAACC
SSI-1       TGCTGGAGTG TTGACCTGTG TGGTTGGTGG TAGCTACTTG ATAATGAACC
Manfredo    TGCTGGAGTG TTGACCTGTG TGGTTGGTGG TAGCTACTTG ATAATGAACC
MGAS8232    TGCTGGAGTG TTGACCTGTG TGGTTGGTGG TACCTACTTG ATAATGAATC

            101                                                  150
ATCC700294  ATCAACAACA AGAAATTGTC TCTAGTGTCA ACAAAGTAAA AGCCTTAACC
MGAS315     ATCAACAACA AGAAATTGTC TCTAGTGTCA ACAAAGTAAA AGCCTTAACC
SSI-1       ATCAACAACA AGAAATTGTC TCTAGTGTCA ACAAAGTAAA AGCCTTAACC
Manfredo    ATCAACAACA AGAAGTTGTC TCTAGTGTCA ACAAAGTAAA AGCCTTAACC
MGAS8232    ATCAACAACA AGAAATTGTC TCTAGTGTCA ACAAAGTAAA AGCCTTAACC

            151                                                  200
ATCC700294  ATAAAAGAAG CCATGGAACA AGGAAAAGAT ATCAGCTTGA CCTTAGCTGG
MGAS315     ATAAAAGAAG CCATGGAACA AGGAAAAGAT ATCAGCTTGA CCTTAGCTGG
SSI-1       ATAAAAGAAG CCATGGAACA AGGAAAAGAT ATCAGCTTGA CCTTAGCTGG
Manfredo    ATAAAAGAAG CCATGGAACA AGGAAAAGAT ATCAGCTTGA CCTTAGCTGG
MGAS8232    ATAAAAGAAG CCATGGAACA AGGAAAAGAT ATCAGCTTGA CCTTAGCTGG

            201                                                  250
ATCC700294  CGAAGTAACA GCTAACAACA GCAGCAAAGT CAAAATCGAC TCAAGTAAAG
MGAS315     CGAAGTAACA GCTAACAACA GCAGCAAAGT CAAAATCGAC TCAAGTAAAG
SSI-1       CGAAGTAACA GCTAACAACA GCAGCAAAGT CAAAATCGAC TCAAGTAAAG
Manfredo    CGAAGTAACA GCTAACAACA GCAGCAAAGT CAAAATCGAC TCAAGTAAAG
MGAS8232    CGAAGTAACA GCTAACAACA GCAGCAAAGT CAAAATCGAC TCAAGTAAAG

            251                                                  300
ATCC700294  GAGAAGTCAA AGAGGTCTTT GTTAAAAAAG GCGATGTTGT CAAAGTAGGA
MGAS315     GAGAAGTCAA AGAGGTCTTT GTTAAAAAAG GCGATGTTGT CAAAGTAGGA
SSI-1       GAGAAGTCAA AGAGGTCTTT GTTAAAAAAG GCGATGTTGT CAAAGTAGGA
Manfredo    GAGAAGTCAA AGAGGTCTTT GTCAAAAAAG GCGATGTTGT CAAAGTAGGA
MGAS8232    GAGAAGTCAA AGATGTCTTT GTCAAAAAAG GCGATGTTGT CAAAGTAGGA

            301                                                  350
ATCC700294  CAACCCTTGT TTAGCTATGA AACGTCACAG CGGTTAACGG CTCAAAGTTC
MGAS315     CAACCCTTGT TTAGCTATGA AACGTCACAG CGGTTAACGG CTCAAAGTTC
SSI-1       CAACCCTTGT TTAGCTATGA AACGTCACAG CGGTTAACGG CTCAAAGTTC
Manfredo    CAACCCTTGT TTAGCTATGA AACGTCACAG CGGTTAACGG CTCAAAGTTC
MGAS8232    CAACCCTTGT TTAGCTATGA AACGTCACAA CGGTTAACGG CTCAAAGTTC

            351                                                  400
ATCC700294  AGAATTTGAT GTTCAAACCA AAGCCAATCA GCTCCAAGTT GCTAAAACCA
MGAS315     AGAATTTGAT GTTCAAACCA AAGCCAATCA GCTCCAAGTT GCTAAAACCA
SSI-1       AGAATTTGAT GTTCAAACCA AAGCCAATCA GCTCCAAGTT GCTAAAACCA
Manfredo    AGAATTTGAT GTTCAAACCA AAGCCAATCA ACTCCAAGTT GCTAAAACCA
MGAS8232    AGAATTTGAT GTTCAAACCA AAGCCAATCA ACTCCAAGTT GCTAAAACCA
```

Figure 33 (continued)

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            401                                                      450
ATCC700294  ATGCAGCATT GAAGTGGGAA ACCTACAATC GCAAGGTCAA TGAAATCAAC
MGAS315     ATGCAGCATT GAAGTGGGAA ACCTACAATC GCAAGGTCAA TGAAATCAAC
SSI-1       ATGCAGCATT GAAGTGGGAA ACCTACAATC GCAAGGTCAA TGAAATCAAC
Manfredo    ATGCAGCATT GAAGTGGGAA ACCTACAATC GCAAGGTCAA TGAAATCAAC
MGAS8232    ATGCAGCATT GAAGTGGGAA ACCTACAATC GCAAGGTCAA TGAAATCAAT

            451                                                      500
ATCC700294  ACCCTAAAAT CTCGCTACAA CACTGCACCA GATGAGAGCT TACTAGAGCA
MGAS315     ACCCTAAAAT CTCGCTACAA CACTGCACCA GATGAGAGCT TACTAGAGCA
SSI-1       ACCCTAAAAT CTCGCTACAA CACTGCACCA GATGAGAGCT TACTAGAGCA
Manfredo    ACCCTAAAAT CTCGCTACAA CACTGCACCA GATGAGAGCT TACTAGAGCA
MGAS8232    ACCCTAAAAT CTCGCTACAA CACTGCACCA GATGAGAGCT TACTAGAGCA

            501                                                      550
ATCC700294  AATTCGCAGC GCAGAAGACA GTGTATCCCA AGCACTAAGC GATGCCAAAA
MGAS315     AATTCGCAGC GCAGAAGACA GTGTATCCCA AGCACTAAGC GATGCCAAAA
SSI-1       AATTCGCAGC GCAGAAGACA GTGTATCCCA AGCACTAAGC GATGCCAAAA
Manfredo    AATTCGCAGC GCAGAAGACA GTGTATCCCA AGCACTAAGC GATGCCAAAA
MGAS8232    AATTCGCAGC GCAGAAGACA GTGTATCTCA AGCACTAAGC GATGCCAAAA

            551                                                      600
ATCC700294  CAGCAGATAG CGATGTCAAA ACCGCTCAAA TCGAACTCGA TAAAGCTAAT
MGAS315     CAGCAGATAG CGATGTCAAA ACCGCTCAAA TCGAACTCGA TAAAGCTAAT
SSI-1       CAGCAGATAG CGATGTCAAA ACCGCTCAAA TCGAACTCGA TAAAGCTAAT
Manfredo    CAGCAGATAG CGATGTCAAA ACCGCTCAAA TCGAACTCGA TAAAGCTAAT
MGAS8232    CAGCAGATAG CGATGTCAAA ACCGCTCAAA TCGAACTCGA TAAAGCTAAT

            601                                                      650
ATCC700294  GCTACTGCCA CAACGGAAAA AGGTAAACTA GAGTATGACA CCGTTAAGTC
MGAS315     GCTACTGCCA CAACGGAAAA AGGTAAACTA GAGTATGACA CCGTTAAGTC
SSI-1       GCTACTGCCA CAACGGAAAA AGGTAAACTA GAGTATGACA CCGTTAAGTC
Manfredo    GCTACTGCCA CAATGGAAAA AGGTAAACTA GAGTATGACA CCGTTAAGTC
MGAS8232    GCTACTGCCG CAACGGAAAA AGGTAAACTA GAGTATGACA CCGTTAAGTC

            651                                                      700
ATCC700294  AGACACCGCA GGAACCATTG TTAGTCTAAA TACTGATTTG CCAAATCAAT
MGAS315     AGACACCGCA GGAACCATTG TTAGTCTAAA TACTGATTTG CCAAATCAAT
SSI-1       AGACACCGCA GGAACCATTG TTAGCCTAAA TACTGATTTG CCAAATCAAT
Manfredo    AGACACCGCA GGAACCATTG TTAGCCTAAA TACTGATTTG CCAAATCAAT
MGAS8232    AGACACCGCA GGAACCATTG TTAGTCTAAA TACTGATTTG CCAAATCAAT

            701                                                      750
ATCC700294  CAAAATCCAA AAAAGAAAAT GAAACTTTTA TGGAAATTAT CGACAAATCA
MGAS315     CAAAATCCAA AAAAGAAAAT GAAACTTTTA TGGAAATTAT CGACAAATCA
SSI-1       CAAAATCCAA AAAAGAAAAT GAAACTTTTA TGGAAATTAT CGACAAATCA
Manfredo    CAAAATCCAA AAAAGAAAAT GAAACTTTTA TGGAAATTAT CGACAAATCA
MGAS8232    CAAAATCCAA AAAAGAAAAT GAAACTTTTA TGGAAATTAT CGACAAATCA

            751                                                      800
ATCC700294  AAAATGTTAG TCAAAGGTAA CATTAGTGAA TTTGACCGTG ACAAGTTAAA
MGAS315     AAAATGTTAG TCAAAGGTAA CATTAGTGAA TTTGACCGTG ACAAGTTAAA
SSI-1       AAAATGTTAG TCAAAGGTAA CATTAGTGAA TTTGACCGTG ACAAGTTAAA
Manfredo    AAAATGTTAG TCAAAGGTAA CATCAGTGAA TTTGACCGTG ACAAGTTAAA
MGAS8232    AAAATGTTAG TCAAAGGTAA CATCAGTGAA TTTGACCGTG ACAAGTTAAA
```

Figure 33 (continued)

```
            801                                                      850
ATCC700294  AATCGGTCAA AAAGTCGAAG TGATTGACCG CAAAGACAAC TCTAAAAAAT
MGAS315     AATCGGTCAA AAAGTCGAAG TGATTGACCG CAAAGACAAC TCTAAAAAAT
SSI-1       AATCGGTCAA AAAGTCGAAG TGATTGACCG CAAAGACAAC TCTAAAAAAT
Manfredo    AATCGATCAA AAAGTCGAAG TGATTGACCG CAAAGACAAC TCTAAAAAAT
MGAS8232    AATCGATCAA AAAGTCGAAG TGATTGACCG CAAAGACAAC TCTAAAAAAT


            851                                                      900
ATCC700294  GGACTGGAAA AGTAACCCAA GTTGGCAACC TCAAAGCAGA GGAAAAAGGC
MGAS315     GGACTGGAAA AGTAACCCAA GTTGGCAACC TCAAAGCAGA GGAAAAAGGC
SSI-1       GGACTGGAAA AGTAACCCAA GTTGGCAACC TCAAAGCAGA GGAAAAAGGC
Manfredo    GGACTGGAAA AGTAACCCAA GTTGGCAACC TCAAAGCAGA GGAAAAAGGC
MGAS8232    GGACTGGAAA AGTAACCCAA GTTGGCAACC TCAAAGCAGA GGAAAAAGGC


            901                                                      950
ATCC700294  CAAGGTCAAG GCCAAGGTGG CAATGACCAA CAAGATAATC CAAACCAAGC
MGAS315     CAAGGTCAAG GCCAAGGTGG CAATGACCAA CAAGATAATC CAAACCAAGC
SSI-1       CAAGGTCAAG GCCAAGGTGG CAATGACCAA CAAGATAATC CAAACCAAGC
Manfredo    CAAGGTCAAG GCCAAGGTGG CAATGACCAA CAAGACAATC CAAACCAAGC
MGAS8232    CAAGGTCAAG GCCAAGGTGG CAATGACCAA CAAGATAATC CAAACCAAGC


            951                                                     1000
ATCC700294  AAAATTCCCT TATGTTATTG AACTTGACCA ATCAGACAAG CAGCCACTCA
MGAS315     AAAATTCCCT TATGTTATTG AACTTGACCA ATCAGACAAG CAGCCACTCA
SSI-1       AAAATTCCCT TATGTTATTG AACTTGACCA ATCAGACAAG CAGCCACTCA
Manfredo    AAAATTCCCT TATGTTATCG AACTTGACCA ATCAGACAAG CAGCCACTCA
MGAS8232    AAAATTCCCT TATGTTATCG AACTTGACCA ATCAGACAAG CAGCCACTCA


            1001                                                    1050
ATCC700294  TTGGCTCACA CACCTATGTT AATGTGCTCA ACAATGTTCC AGAAGCTGGC
MGAS315     TTGGCTCACA CACCTATGTT AATGTACTCA ACAATGTTCC AGAAGCTGGC
SSI-1       TTGGCTCACA CACCTATGTT AATGTACTCA ACAATGTTCC AGAAGCTGGC
Manfredo    TTGGCTCACA CACCTATGTT AATGTGCTCA ACAATGTTCC AGAAGCTGGC
MGAS8232    TTGGTTCACA CACCTATGTT AATGTGCTCA ACAATGTTCC AGAAGCTGGC


            1051                                                    1100
ATCC700294  AAGATCGTAT TGAAAGAAAC CTTTACAATG GCAGAAAATG GAAAAACCTA
MGAS315     AAGATCGTAT TGAAAGAAAC CTTTACAATG GCAGAAAATG GAAAAACCTA
SSI-1       AAGATCGTAT TGAAAGAAAC CTTTACAATG GCAGAAAATG GAAAAACCTA
Manfredo    AAGATCGTAT TGAAAGAAAC CTTTACAATG GCAGAAAATG GAAAAACCTA
MGAS8232    AAGATCGTAT TGAAAGAAAC CTTTACAATG GCAGAAAATG GAAAAACCTA


            1101                                                    1150
ATCC700294  TGTGTGGAAA GTTGATAAAA ACAAGGTCAA AAAACAAGAA ATCAAGACTA
MGAS315     TGTGTGGAAA GTTGATAAAA ACAAGGTCAA AAAACAAGAA ATCAAGACTA
SSI-1       TGTGTGGAAA GTTGATAAAA ACAAGGTCAA AAAACAAGAA ATCAAGACTA
Manfredo    TGTGTGGAAA GTTGATAAAA ACAAGGTCAA AAAACAAGAA ATCAAGACTA
MGAS8232    TGTGTGGAAA GTTGATAAAA ACAAGGTCAA AAAACAAGAA ATCAAGACTA


            1151                                                    1200
Manfredo    AGCCCTTCTC AAAAGGTTAT GTTGAGGTAA CAAGTGGCTT GACTATGCAA
MGAS315     AGCCCTTCTC AAAAGGTTAT GTTGAGGTAA CAAGTGGCTT GACTATGCAA
SSI-1       AGCCCTTCTC AAAAGGTTAT GTTGAGGTAA CAAGTGGCTT GACTATGCAA
Manfredo    AGCCCTTCTC AAAAGGTTAT GTTGAGGTGA CAAGTGGCTT GACTATGCAA
MGAS8232    AGCCCTTCTC AAAAGGTTAT GTTGAGGTGA CAAGCGGCTT GACTATGCAA
```

Figure 33 (continued)

```
              1201                                              1250
ATCC700294    GATAAGATTG CTCAGCCGCT TCCTGGCATG AAAGACGGTA TGGAGGTAGG
MGAS315       GATAAGATTG CTCAGCCGCT TCCTGGCATG AAAGACGGTA TGGAGGTAGG
SSI-1         GATAAGATTG CTCAGCCGCT TCCTGGCATG AAAGACGGTA TGGAGGTAGG
Manfredo      GATAAGATTG CTCAGCCGCT TCCTGGCATG AAAGACGGTA TGGAGGTAGG
MGAS8232      GATAAGATTG CTCAGCCGCT TCCTGGCATG AAAGACGGTA TGGAGGTAGG


              1251           1269
ATCC700294    AAGTATTGTT AAACCTTAA
MGAS315       AAGTATTGTT AAACCTTAA
SSI-1         AAGTATTGTT AAACCTTAA
Manfredo      AAGTATTGTT AAACCTTAA
MGAS8232      AAGTATTGTT AAACCTTAA
```

Figure 34

```
              1                                                  50
ATCC700294    MFQLRKKMTR KQLALLSAGV LTCVVGGSYL IMNHQQQEIV SSVNKVKALT
MGAS315       MFQLRKKMTR KQLALLSAGV LTCVVGGSYL IMNHQQQEIV SSVNKVKALT
SSI-1         MFQLRKKMTR KQLALLSAGV LTCVVGGSYL IMNHQQQEIV SSVNKVKALT
Manfredo      MFQLRKKMTR KQLALLSAGV LTCVVGGSYL IMNHQQQEVV SSVNKVKALT
MGAS8232      MFQLRKKMTR KQLALLSAGV LTCVVGGTYL IMNHQQQEIV SSVNKVKALT


              51                                                 100
ATCC700294    IKEAMEQGKD ISLTLAGEVT ANNSSKVKID SSKGEVKEVF VKKGDVVKVG
MGAS315       IKEAMEQGKD ISLTLAGEVT ANNSSKVKID SSKGEVKEVF VKKGDVVKVG
SSI-1         IKEAMEQGKD ISLTLAGEVT ANNSSKVKID SSKGEVKEVF VKKGDVVKVG
Manfredo      IKEAMEQGKD ISLTLAGEVT ANNSSKVKID SSKGEVKEVF VKKGDVVKVG
MGAS8232      IKEAMEQGKD ISLTLAGEVT ANNSSKVKID SSKGEVKDVF VKKGDVVKVG


              101                                                150
ATCC700294    QPLFSYETSQ RLTAQSSEFD VQTKANQLQV AKTNAALKWE TYNRKVNEIN
MGAS315       QPLFSYETSQ RLTAQSSEFD VQTKANQLQV AKTNAALKWE TYNRKVNEIN
SSI-1         QPLFSYETSQ RLTAQSSEFD VQTKANQLQV AKTNAALKWE TYNRKVNEIN
Manfredo      QPLFSYETSQ RLTAQSSEFD VQTKANQLQV AKTNAALKWE TYNRKVNEIN
MGAS8232      QPLFSYETSQ RLTAQSSEFD VQTKANQLQV AKTNAALKWE TYNRKVNEIN


              151                                                200
ATCC700294    TLKSRYNTAP DESLLEQIRS AEDSVSQALS DAKTADSDVK TAQIELDKAN
MGAS315       TLKSRYNTAP DESLLEQIRS AEDSVSQALS DAKTADSDVK TAQIELDKAN
SSI-1         TLKSRYNTAP DESLLEQIRS AEDSVSQALS DAKTADSDVK TAQIELDKAN
Manfredo      TLKSRYNTAP DESLLEQIRS AEDSVSQALS DAKTADSDVK TAQIELDKAN
MGAS8232      TLKSRYNTAP DESLLEQIRS AEDSVSQALS DAKTADSDVK TAQIELDKAN


              201                                                250
ATCC700294    ATATTEKGKL EYDTVKSDTA GTIVSLNTDL PNQSKSKKEN ETFMEIIDKS
MGAS315       ATATTEKGKL EYDTVKSDTA GTIVSLNTDL PNQSKSKKEN ETFMEIIDKS
SSI-1         ATATTEKGKL EYDTVKSDTA GTIVSLNTDL PNQSKSKKEN ETFMEIIDKS
Manfredo      ATATMEKGKL EYDTVKSDTA GTIVSLNTDL PNQSKSKKEN ETFMEIIDKS
MGAS8232      ATAATEKGKL EYDTVKSDTA GTIVSLNTDL PNQSKSKKEN ETFMEIIDKS


              251                                                300
ATCC700294    KMLVKGNISE FDRDKLKIGQ KVEVIDRKDN SKKWTGKVTQ VGNLKAEEKG
MGAS315       KMLVKGNISE FDRDKLKIGQ KVEVIDRKDN SKKWTGKVTQ VGNLKAEEKG
SSI-1         KMLVKGNISE FDRDKLKIGQ KVEVIDRKDN SKKWTGKVTQ VGNLKAEEKG
Manfredo      KMLVKGNISE FDRDKLKIDQ KVEVIDRKDN SKKWTGKVTQ VGNLKAEEKG
MGAS8232      KMLVKGNISE FDRDKLKIDQ KVEVIDRKDN SKKWTGKVTQ VGNLKAEEKG
```

Figure 34 (continued)

```
            301                                                    350
ATCC700294  QGQGQGGNDQ QDNPNQAKFP YVIELDQSDK QPLIGSHTYV NVLNNVPEAG
MGAS315     QGQGQGGNDQ QDNPNQAKFP YVIELDQSDK QPLIGSHTYV NVLNNVPEAG
SSI-1       QGQGQGGNDQ QDNPNQAKFP YVIELDQSDK QPLIGSHTYV NVLNNVPEAG
Manfredo    QGQGQGGNDQ QDNPNQAKFP YVIELDQSDK QPLIGSHTYV NVLNNVPEAG
MGAS8232    QGQGQGGNDQ QDNPNQAKFP YVIELDQSDK QPLIGSHTYV NVLNNVPEAG


            351                                                    400
ATCC700294  KIVLKETFTM AENGKTYVWK VDKNKVKKQE IKTKPFSKGY VEVTSGLTMQ
MGAS315     KIVLKETFTM AENGKTYVWK VDKNKVKKQE IKTKPFSKGY VEVTSGLTMQ
SSI-1       KIVLKETFTM AENGKTYVWK VDKNKVKKQE IKTKPFSKGY VEVTSGLTMQ
Manfredo    KIVLKETFTM AENGKTYVWK VDKNKVKKQE IKTKPFSKGY VEVTSGLTMQ
MGAS8232    KIVLKETFTM AENGKTYVWK VDKNKVKKQE IKTKPFSKGY VEVTSGLTMQ


            401                 422
ATCC700294  DKIAQPLPGM KDGMEVGSIV KP
MGAS315     DKIAQPLPGM KDGMEVGSIV KP
SSI-1       DKIAQPLPGM KDGMEVGSIV KP
Manfredo    DKIAQPLPGM KDGMEVGSIV KP
MGAS8232    DKIAQPLPGM KDGMEVGSIV KP
```

Figure 35

```
            1                                                      50
ATCC700294  ATGATAAAAC GATGTAAAGG AATTGGTCTA GCCTTAATGG CCTTCTTTTT
MGAS315     ATGATAAAAC GATGTAAAGG AATTGGTCTA GTCTTAATGG CCTTCTTTTT
SSI-1       ATGATAAAAC GATGTAAAGG AATTGGTCTA GTCTTAATGG CCTTCTTTTT
Manfredo    ATGATAAAAC GATGTAAAGG AATTGGTCTA GCCTTAATGG CCTTCTTTTT
MGAS8232    ATGATAAAAC GATGTAAAGG AATTGGTCTA GTCTTAATGG CCTTCTTTTT


            51                                                     100
ATCC700294  GGTAGCTTGT GTGAATCAGC ACCCTAAAAC GGCTAAAGAG ACTGAACAGC
MGAS315     GGTAGCTTGT GTAAATCAGC ACCCTAAAAC GGCTAAAGAG ACTGAACAGC
SSI-1       GGTAGCTTGT GTAAATCAGC ACCCTAAAAC GGCTAAAGAG ACTGAACAGC
Manfredo    GGTAGCTTGT GTGAATCAGC ACCCTAAAAC GGCTAAAGAG ACTGAACAGC
MGAS8232    GGTAGCTTGT GTAAATCAGC ACCCTAAAAC GGCTAAAGAG ACTGAACAGC


            101                                                    150
ATCC700294  AGAGAATTGT AGCCACTTCG GTTGCTGTGG TTGATATCTG TGACCGTTTA
MGAS315     AGAGAATTGT AGCCACTTCG GTTGCTGTGG TTGATATCTG TGACCGTTTA
SSI-1       AGAGAATTGT AGCCACTTCG GTTGCTGTGG TTGATATCTG TGACCGTTTA
Manfredo    AGAGAATTGT AGCCACTTCG GTTGCTGTGG TTGATATCTG TGACCGTTTA
MGAS8232    AGAGAATTGT AGCCACTTCG GTTGCTGTGG TTGATATCTG TGACCGTTTA


            151                                                    200
ATCC700294  AATTTAGACC TCGTTGGGGT TTGTGATAGT AAATTATATA CCCTTCCTAA
MGAS315     AATTTAGACC TCGTTGGGGT TTGTGATAGT AAATTATATA CCCTTCCTAA
SSI-1       AATTTAGACC TCGTTGGGGT TTGTGATAGT AAATTATATA CCCTTCCTAA
Manfredo    AATTTAGACC TCGTTGGGGT TTGTGATAGT AAATTATATA CCCTTCCTAA
MGAS8232    AATTTAGACC TCGTTGGGGT TTGTGATAGT AAATTATATA CCCTTCCTAA


            201                                                    250
ATCC700294  ACGCTATGAT GCTGTTAAGC GTGTGGGTTT ACCCATGAAT CCTGATATAG
MGAS315     ACGCTATGAT GCTGTTAAGC GTGTGGGTTT ACCCATGAAT CCTGATATAG
SSI-1       ACGCTATGAT GCTGTTAAGC GTGTGGGTTT ACCCATGAAT CCTGATATAG
Manfredo    ACGCTATGAT GCTGTTAAGC GTGTGGGTTT ACCCATGAAT CCTGATATAG
MGAS8232    ACGCTATGAT GCTGTTAAGC GTGTGGGTTT ACCCATGAAT CCTGATATAG
```

Figure 35 (continued)

```
           251                                                    300
ATCC700294 AGTTGATTGC TTCTTTGAAA CCAACTTGGA TTTTGAGTCC CAATTCTTTA
MGAS315    AGTTGATTGC TTCTTTGAAA CCAACTTGGA TTTTGAGTCC CAATTCTTTA
SSI-1      AGTTGATTGC TTCTTTGAAA CCAACTTGGA TTTTGAGTCC CAATTCTTTA
Manfredo   AGTTGATTGC TTCTTTGAAA CCAACTTGGA TTTTGAGTCC CAATTCTTTA
MGAS8232   AGTTGATTGC TTCTTTGAAA CCAACTTGGA TTTTGAGTCC CAATTCTTTA


           301                                                    350
ATCC700294 CAAGAAGATT TGGAACCCAA GTATCAAAAA TTGGATACTG AGTATGGTTT
MGAS315    CAAGAAGATT TGGAACCCAA GTATCAAAAA TTGGATACTG AGTATGGTTT
SSI-1      CAAGAAGATT TGGAACCCAA GTATCAAAAA TTGGATACTG AGTATGGTTT
Manfredo   CAAGAAGATT TGGAACCCAA GTATCAAAAA TTGGATACTG AGTATGGTTT
MGAS8232   CAAGAAGATT TGGAACCCAA GTATCAAAAA TTGGATACTG AGTATGGTTT


           351                                                    400
ATCC700294 TTTGAACTTA CGAAGTGTTG AGGGCATGTA CCAGTCCATT GATGATTTAG
MGAS315    TTTGAACTTA CGAAGTGTTG AGGGCATGTA CCAGTCTATT GATGATTTAG
SSI-1      TTTGAACTTA CGAAGTGTTG AGGGCATGTA CCAGTCTATT GATGATTTAG
Manfredo   TTTGAACTTA CGAAGTGTTG AGGGCATGTA CCAGTCCATT GATGATTTAG
MGAS8232   TTTGAACTTA CGAAGTGTTG AGGGCATGTA CCAGTCTATT GATGATTTAG


           401                                                    450
ATCC700294 GGAACCTTTT CCAACGTCAA CAAGAAGCAA AAGAATTGCG CCAGCAATAC
MGAS315    GGAACCTTTT CCAACGTCAA CAAGAAGCAA AAGAATTGCG CCAGCAATAC
SSI-1      GGAACCTTTT CCAACGTCAA CAAGAAGCAA AAGAATTGCG CCAGCAATAC
Manfredo   GGAACCTTTT CCAACGTCAA CAAGAAGCAA AAGAATTGCG CCAGCAATAC
MGAS8232   GGAACCTTTT CCAACGTCAA CAAGAAGCAA AAGAATTGCG CCAGCAATAC


           451                                                    500
ATCC700294 CAGGACTATT ATCGTGCTTT CCAAGCTAAA CGTAAGGGGA AGAAAAAGCC
MGAS315    CAGGACTATT ATCGTGCTTT CCAAGCTAAA CGCAAGGGGA AGAAAAAGCC
SSI-1      CAGGACTATT ATCGTGCTTT CCAAGCTAAA CGCAAGGGGA AGAAAAAGCC
Manfredo   CAGGACTATT ATCGTGCTTT CCAAGCTAAA CGTAAGGGGA AGAAAAAGCC
MGAS8232   CAGGACTATT ATCGTGCTTT CCAAGCTAAA CGTAAGGGGA AGAAAAAGCC


           501                                                    550
ATCC700294 TAAAGTGCTT ATTCTTATGG GCTTGCCAGG TAGTTATTTG GTGGCGACGA
MGAS315    TAAAGTGCTT ATTCTTATGG GCTTGCCAGG TAGTTATTTG GTGGCGACGA
SSI-1      TAAAGTGCTT ATTCTTATGG GCTTGCCAGG TAGTTATTTG GTGGCGACGA
Manfredo   TAAAGTGCTT ATTCTTATGG GCTTGCCAGG TAGTTATTTG GTGGCGACGA
MGAS8232   TAAAGTGCTT ATTCTTATGG GCTTGCCAGG TAGTTATTTG GTGGCGACGA


           551                                                    600
ATCC700294 ACCAATCTTA TGTAGGGAAT CTTTTGGACT TGGCAGGTGG TGAGAATGTT
MGAS315    ACCAATCTTA TGTAGGGAAT CTTTTGGACT TGGCAGGTGG TGAGAATGTT
SSI-1      ACCAATCTTA TGTAGGGAAT CTTTTGGACT TGGCAGGTGG TGAGAATGTT
Manfredo   ACCAATCTTA TGTAGGGAAT CTTTTGGATT TGGCAGGTGG TGAGAATGTT
MGAS8232   ACCAATCTTA TGTAGGGAAT CTTTTGGACT TGGCAGGTGG TGAGAATGTT


           601                                                    650
ATCC700294 TATCAGTCAG ATGAGAAAGA ATTTCTATCA GCTAATCCTG AAGACATGCT
MGAS315    TATCAGTCAG ATGAGAAAGA ATTTCTATCA GTTAATCCTG AAGACATGCT
SSI-1      TATCAGTCAG ATGAGAAAGA ATTTCTATCA GTTAATCCTG AAGACATGCT
Manfredo   TATCAGTCAG ATGAGAAAGA ATTTCTATCA GCTAATCCTG AAGACATGCT
MGAS8232   TATCAGTCAG ATGAGAAAGA ATTTCTATCA GTTAATCCTG AAGACATGCT
```

Figure 35 (continued)

```
                651                                                    700
ATCC700294      GGCTAAGGAG CCTGACTTGA TTTTACGAAC AGCTCATGCC ATTCCAGACA
MGAS315         AGCTAAGGAG CCTGACTTGA TTTTACGAAC AGCTCACGCC ATTCCAGACA
SSI-1           AGCTAAGGAG CCTGACTTGA TTTTACGAAC AGCTCACGCC ATTCCAGACA
Manfredo        GGCTAAGGAG CCTGATTTGA TTTTACGAAC AGCTCACGCC ATTCCAGACA
MGAS8232        AGCTAAGGAG CCTGACTTGA TTTTACGAAC AGCTCACGCC ATTCCAGACA


                701                                                    750
ATCC700294      AGGTAAAAGT GATGTTTGAC AAAGAATTTG CTGAAAATGA TATTTGGAAA
MGAS315         AGGTAAAAGT GATGTTTGAC AAAGAATTTG CTGAAAATGA TATTTGGAAA
SSI-1           AGGTAAAAGT GATGTTTGAC AAAGAATTTG CTGAAAATGA TATTTGGAAA
Manfredo        AGGTAAAAGT GATGTTTGAC AAAGAATTTG CTGAAAATGA TATTTGGAAA
MGAS8232        AGGTAAAAGT GATGTTTGAC AAAGAATTTG CTGAAAATGA TATTTGGAAA


                751                                                    800
ATCC700294      CATTTTACGG CAGTCAAGGA AGGGAAAGTC TATGATTTGG ACAATACCCT
MGAS315         CATTTTACGG CAGTCAAGGA AGGGAAAGTC TATGATTTGG ACAATACCCT
SSI-1           CATTTTACGG CAGTCAAGGA AGGGAAAGTC TATGATTTGG ACAATACCCT
Manfredo        CATTTTACGG CAGTCAAGGA AGGGAAAGTC TATGATTTGG ACAATACCCT
MGAS8232        CATTTTACGG CAGTCAAGGA AGGGAAAGTC TATGATTTGG ACAATACCCT


                801                                                    850
ATCC700294      GTTTGGCATG AGTGCTAAAT TGAACTACCC AGAAGCCTTG GACACCTTAA
MGAS315         GTTTGGCATG AGTGCTAAAT TGAACTACCC AGAAGCCTTG GACACCTTAA
SSI-1           GTTTGGCATG AGTGCTAAAT TGAACTACCC AGAAGCCTTG GACACCTTAA
Manfredo        GTTTGGCATG AGTGCTAAAT TGAACTACCC AGAAGCCTTG GACACCTTAA
MGAS8232        GTTTGGCATG AGTGCTAAAT TGAACTACCC AGAAGCCTTG GACACCTTAA


                851                                 885
ATCC700294      CACAGCTTTT TGACCACGTG GGAGATCATC CGTAA
MGAS315         CACAGCTTTT TGACCACGTG GGAGATCATC CGTAA
SSI-1           CACAGCTTTT TGACCACGTG GGAGATCATC CGTAA
Manfredo        CACAGCTTTT TGACCGCGTG GGAGATCATC CGTAA
MGAS8232        CACAGCTTTT TGACCACGTG GGAGATCATC CGTAA
```

Figure 36

```
                1                                                      50
ATCC700294      MIKRCKGIGL ALMAFFLVAC VNQHPKTAKE TEQQRIVATS VAVVDICDRL
MGAS315         MIKRCKGIGL VLMAFFLVAC VNQHPKTAKE TEQQRIVATS VAVVDICDRL
SSI-1           MIKRCKGIGL VLMAFFLVAC VNQHPKTAKE TEQQRIVATS VAVVDICDRL
Manfredo        MIKRCKGIGL ALMAFFLVAC VNQHPKTAKE TEQQRIVATS VAVVDICDRL
MGAS8232        MIKRCKGIGL VLMAFFLVAC VNQHPKTAKE TEQQRIVATS VAVVDICDRL


                51                                                     100
ATCC700294      NLDLVGVCDS KLYTLPKRYD AVKRVGLPMN PDIELIASLK PTWILSPNSL
MGAS315         NLDLVGVCDS KLYTLPKRYD AVKRVGLPMN PDIELIASLK PTWILSPNSL
SSI-1           NLDLVGVCDS KLYTLPKRYD AVKRVGLPMN PDIELIASLK PTWILSPNSL
Manfredo        NLDLVGVCDS KLYTLPKRYD AVKRVGLPMN PDIELIASLK PTWILSPNSL
MGAS8232        NLDLVGVCDS KLYTLPKRYD AVKRVGLPMN PDIELIASLK PTWILSPNSL


                101                                                    150
ATCC700294      QEDLEPKYQK LDTEYGFLNL RSVEGMYQSI DDLGNLFQRQ QEAKELRQQY
MGAS315         QEDLEPKYQK LDTEYGFLNL RSVEGMYQSI DDLGNLFQRQ QEAKELRQQY
SSI-1           QEDLEPKYQK LDTEYGFLNL RSVEGMYQSI DDLGNLFQRQ QEAKELRQQY
Manfredo        QEDLEPKYQK LDTEYGFLNL RSVEGMYQSI DDLGNLFQRQ QEAKELRQQY
MGAS8232        QEDLEPKYQK LDTEYGFLNL RSVEGMYQSI DDLGNLFQRQ QEAKELRQQY
```

Figure 36 (continued)

```
              151                                                    200
ATCC700294    QDYYRAFQAK RKGKKKPKVL ILMGLPGSYL VATNQSYVGN LLDLAGGENV
MGAS315       QDYYRAFQAK RKGKKKPKVL ILMGLPGSYL VATNQSYVGN LLDLAGGENV
SSI-1         QDYYRAFQAK RKGKKKPKVL ILMGLPGSYL VATNQSYVGN LLDLAGGENV
Manfredo      QDYYRAFQAK RKGKKKPKVL ILMGLPGSYL VATNQSYVGN LLDLAGGENV
MGAS8232      QDYYRAFQAK RKGKKKPKVL ILMGLPGSYL VATNQSYVGN LLDLAGGENV

              201                                                    250
ATCC700294    YQSDEKEFLS ANPEDMLAKE PDLILRTAHA IPDKVKVMFD KEFAENDIWK
MGAS315       YQSDEKEFLS VNPEDMLAKE PDLILRTAHA IPDKVKVMFD KEFAENDIWK
SSI-1         YQSDEKEFLS VNPEDMLAKE PDLILRTAHA IPDKVKVMFD KEFAENDIWK
Manfredo      YQSDEKEFLS ANPEDMLAKE PDLILRTAHA IPDKVKVMFD KEFAENDIWK
MGAS8232      YQSDEKEFLS VNPEDMLAKE PDLILRTAHA IPDKVKVMFD KEFAENDIWK

              251                                          294
ATCC700294    HFTAVKEGKV YDLDNTLFGM SAKLNYPEAL DTLTQLFDHV GDHP
MGAS315       HFTAVKEGKV YDLDNTLFGM SAKLNYPEAL DTLTQLFDHV GDHP
SSI-1         HFTAVKEGKV YDLDNTLFGM SAKLNYPEAL DTLTQLFDHV GDHP
Manfredo      HFTAVKEGKV YDLDNTLFGM SAKLNYPEAL DTLTQLFDRV GDHP
MGAS8232      HFTAVKEGKV YDLDNTLFGM SAKLNYPEAL DTLTQLFDHV GDHP
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